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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/332,338	06/14/1999	GUILLERMO J. ROZAS	TRANS11	2806

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EXAMINER

NGUYEN, DUSTIN

ART UNIT	PAPER NUMBER
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2154

DATE MAILED: 11/20/2003

14

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application

09/332,338

Applicant(s)

ROZAS ET AL

Examiner

Dustin Nguyen

Art Unit

2154

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 August 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 37-78 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 37-52 and 65-78 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) 37-78 are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

1. Claims 37 - 78 are presented for examination.

Election/Restrictions

2. Restriction to one of the following inventions is required under 35 U.S.C. 121:
 - I. Claims 53-64, drawn to reordering of instruction, classified in class 712, subclass 216.
 - II. Claims 37-52, and 65-78 drawn to eliminating instruction, classified in class 712, subclass 300.
3. Inventions I and II are related as combination and subcombination. Inventions in this relationship are distinct if it can be shown that (1) the combination as claimed does not require the particulars of the subcombination as claimed for patentability, and (2) that the subcombination has utility by itself or in other combinations (MPEP § 806.05(c)). In the instant case, the combination as claimed does not require the particulars of the subcombination as claimed because reordering set of instruction based on certain constrains can be performed without eliminating instructions. The subcombination has separate utility such as eliminating instruction to prevent incorrect data accessed.
4. Because these inventions are distinct for the reasons given above and the search required for Group I is not required for Group II, restriction for examination purposes as indicated is proper.

Art Unit: 2154

5. During a telephone conversation with Mr. Ronald Pomerence on November 13, 2003 a provisional election was made without traverse to prosecute the invention of group II, claims 37-52 and 65-78. Affirmation of this election must be made by applicant in replying to this Office action. Claims 53-64 withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 37, 38, 42-52, 65-78 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kahle et al. [US Patent No 5,467,473], in view of Kreitzer [Us Patent No 5,253,349].

8. As per claim 37, Kahle discloses the invention substantially as claimed including a method of scheduling and executing instructions comprising:

a) accessing a sequence of instructions [col 9, lines 50-56] comprising:

a first memory operation that involves a first address range [col 5, lines 46-50];

a second memory operation that involves at least a portion of said first address range [col 5, lines 50-52];

and a third memory operation intervening said first and second memory operations, wherein it is not known whether said third memory operation involves an address within said

Art Unit: 2154

first address range, wherein at least one of said first through third memory operations comprises a store operation [col 5, lines 61-col 6, lines 13]; and

d) determining, during said executing, if said third memory operation involves an address within said first address range [col 2, lines 59-col 3, lines 11].

Kahle does not specifically disclose

b) eliminating said second memory operation from said sequence of instructions;

c) executing said sequence of instructions with said second memory operation eliminated.

Kreitzer discloses

b) eliminating said second memory operation from said sequence of instructions [col 1, lines 34-42];

c) executing said sequence of instructions with said second memory operation eliminated [col 3, lines 42-54].

It would have been obvious to a person skill in the art at the time the invention was made to combine the teaching of Kahle and Kreitzer because Kreitzer's teaching of eliminating instructions would allow to reduce instruction redundancy and prevent data corruption to speed up system performance.

9. As per claim 38, Kahle discloses prior to said executing said sequence of instructions, adding information to said third memory operation to allow determination of said first address range [col 1, lines 45-48; and col 9, lines 16-22].

Art Unit: 2154

10. As per claim 42, Kahle discloses storing a memory address associated with said first address range in a register prior to said executing said sequence of instructions [col 3, lines 60-64].

11. As per claim 43, Kahle discloses
said sequence of instruction comprises a fourth memory operation that is in
said sequence of instructions after said first memory operation [Figure 2]; and
further comprising adding information to said fourth memory operation that
allows said fourth memory operation to execute without exception even if said fourth
memory operation involves said first address range [col 1, lines 45-48; and col 6, lines 1-13].

12. As per claim 44, it is rejected for similar reasons as stated above in claim 37.

13. As per claim 45 , it is rejected for similar reasons as stated above in claim 37.
Furthermore, Kahle discloses a first load instruction, a second load instruction and a store
instruction [Figures 2 and 4].

14. As per claim 46, Kahle discloses storing a memory address associated with said first
address range in a protection register [col 3, lines 60-64].

15. As per claim 47, Kahle discloses adding a flag to said store instruction to indicate said
protection register [col 1, lines 45-48; and col 9, lines 16-22].

16. As per claim 48, Kahle discloses changing said first load instruction to a load and protect instruction [col 6, lines 42-52].

17. As per claim 49, it is rejected for similar reasons as stated above in claims 37 and 45.

18. As per claims 50-52, they are rejected for similar reasons as stated above in claims 46-48.

19. As per claim 65, it is rejected for similar reasons as stated above in claim 37.

20. As per claims 66 and 67, they are rejected for similar reasons as stated above in claims 46 and 47.

21. As per claim 68, Kahle discloses first memory operation comprises a load operation [Figure 2].

22. As per claim 69, Kahle discloses second memory operation comprises a load operation [Figure 2].

23. As per claim 70, Kahle discloses second memory operation comprises a store operation [Figure 2].

Art Unit: 2154

24. As per claim 71, it is rejected for similar reasons as stated above in claims 37 and 45.

25. As per claim 72-74, they are rejected for similar reasons as stated above in claims 46-48.

26. As per claims 75-78, they are rejected for similar reasons as stated above in claims 37, 45-48.

27. Claims 39-41 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kahle et al. [US Patent No 5,467,473], in view of Kreitzer [Us Patent No 5,253,349], and further in view of Thayer et al. [US Patent No 6,173,366].

28. As per claim 39, Kahle, Kreitzer do not specifically disclose a mask allowing determination of which of a plurality of registers hold protected addresses. Thayer discloses a mask allowing determination of which of a plurality of registers hold protected addresses [col 34, lines 36-40]. It would have been obvious to a person skill in the art at the time the invention was made to combine the teaching of Kahle, Kreitzer and Thayer because Thayer's teaching of a mask would allow to determine conflict to prevent data corruption.

29. As per claim 40, Kahle discloses determining, during said executing, if said third memory operation involves an address within a range of any of said protected addresses [col 7, lines 19-28].

30. As per claim 41, Kahle discloses storing a memory address associated with said first address range in one of said plurality of registers prior to said executing said sequence of instructions [col 3, lines 60-64].

31. Applicant's arguments with respect to claims 37-52 and 65-78 have been considered but are moot in view of the new ground(s) of rejection.

32. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Conclusion

Art Unit: 2154

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dustin Nguyen whose telephone number is (703) 305-5321. The examiner can normally be reached on Monday – Friday (8:00 – 5:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Meng-Ai An can be reached on (703) 305-9678.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directly to the receptionist whose telephone number is (703) 305-3900.

Dustin Nguyen



MENG-AL T. AN
SUPERVISORY PATENT EXAMINER
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